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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/049,170	05/22/2002	Akira Hashimoto	MAT-8211US	7946

7590 03/01/2004

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EXAMINER

MAYES, MELVIN C

ART UNIT	PAPER NUMBER
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1734

DATE MAILED: 03/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/049,170	HASHIMOTO, AKIRA	
	Examiner	Art Unit	
	Melvin Curtis Mayes	1734	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 November 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 15-19 is/are allowed.
- 6) ☒ Claim(s) 1-3 and 7-10 is/are rejected.
- 7) ☒ Claim(s) 4-6, 11-14, 20 and 21 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

(1)

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

(2)

Claims 1-3 and 7-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mikeska et al. 5,254,191 in view of JP 11-121645.

Mikeska et al. disclose a method of making a ceramic body comprising: providing a pre-fired ceramic substrate of high thermal conductivity material such as AlN (heat-resistant substrate or sintered ceramic substrate) having metallization; laminating to the ceramic substrate an unfired ceramic tape (green sheet) having metallization and filled vias and to the ceramic tape a constraining layer; and firing the assemblage (col. 13, line 15 – col. 14, line 60). Mikeska et al. do not disclose providing the prefired ceramic substrate with metallization by intaglio printing with an adhesive layer on the ceramic substrate.

JP 11-121645 teaches that a sintered ceramic substrate can be provided with a conductor pattern by filling an intaglio with conductor paste, pasting the intaglio and ceramic substrate together using an glue line (adhesive layer) on the ceramic substrate and under heat and pressure, removing the intaglio and sintering before providing the ceramic substrate with an insulating layer. The method can provide high wiring density at low wiring resistance (Abstract and computer translation).

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It would have been obvious to one of ordinary skill in the art to have modified the method of Mikeska et al. for making a ceramic body by providing the metallization (conductive pattern) on the prefired ceramic substrate by intaglio, as taught by JP '645, to provide high wiring density at low wiring resistance. Providing the metallization on the prefired ceramic substrate by filling an intaglio with conductor paste, pasting the intaglio and ceramic substrate together using an glue line (adhesive layer) on the ceramic substrate under heat and pressure and removing the intaglio before laminating the unfired ceramic tape to the ceramic substrate would have been obvious to one of ordinary skill in the art as a method of providing a sintered ceramic substrate with metallization, as taught by JP '645.

Allowable Subject Matter

(3)

Claims 4-6, 11-14, 20 and 21 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

(4)

Claims 15-19 are allowed.

Response to Arguments

(5)

Applicant's arguments filed November 24, 2003 have been fully considered but they are not persuasive.

Applicant argues that Mikeska only discloses ceramic tape and accordingly, Applicant's claimed feature of an un-sintered green sheet is missing from the reference and also missing from JP '645.

(6)

Mikeska et al. disclose making a ceramic body by laminating an unfired ceramic tape to a pre-fired ceramic substrate having metallization. The pre-fired ceramic substrate corresponds to the claimed "heat-resistant substrate" of Claim 1 and "sintered ceramic substrate" of Claim 7. The unfired ceramic tape corresponds to the claimed "un-sintered green sheet." The terms "ceramic tape" and "green sheet" are well known and interchangeable in the art. JP 11-121645 is pertinent because it teaches that a sintered ceramic substrate can be provided with a conductor pattern (metallization) by using an intaglio and a glue line (adhesive layer) on the substrate.

Conclusion

(7)

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after

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the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

(8)

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melvin Curtis Mayes whose telephone number is 571-272-1234. The examiner can normally be reached on Mon-Fri 7:30 AM - 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on 571-272-1226. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Melvin Curtis Mayes
Primary Examiner
Art Unit 1734

MCM
February 20, 2004